

Claims

- [c1] 1. A semiconductor device, comprising:
a semiconductor substrate main unit; and
a thin portion that is thinner than the main unit and
formed such that a recessed portion is formed in the
semiconductor substrate, the thin portion having at least
one through hole formed therein;
wherein the thin portion is formed such that the etching
rate thereof is slower than that of the main unit.
- [c2] 2. The semiconductor device set forth in claim 1,
wherein the thin portion and the main unit are formed to
be unitary with each other.
- [c3] 3. The semiconductor device set forth in claim 1,
wherein a dopant is infused in the thin portion.
- [c4] 4. The semiconductor device set forth in claim 1,
wherein the thin portion is formed by means of a selec-
tive oxide film.
- [c5] 5. A method of producing a semiconductor device, com-
prising the steps of:
an etching stopper formation step that forms an etching
stopper on a first surface of the semiconductor sub-

strate; and

a thin portion formation step that forms a recessed portion in the semiconductor substrate and a thin portion having at least one through hole formed therein by etching the semiconductor substrate from a second surface that is opposite the first surface of the semiconductor substrate such that the etching stopper remains.

- [c6] 6. A semiconductor device, comprising:
- a semiconductor substrate;
 - an attachment organic film formed on at least a portion of a surface of the semiconductor substrate;
 - an inorganic film that is formed on a surface of the semiconductor substrate that is opposite the surface in which the attachment organic film is formed, the inorganic film having a through hole which the attachment organic film cannot pass through;
 - an organic film that is provided on the surface of the inorganic film such that the inorganic film is interposed between the attachment organic film and the organic film, the organic film unitarily formed with the attachment organic film via the through hole.

- [c7] 7. The semiconductor device set forth in claim 6, wherein:
- localized recessed portions are formed in the surface of the semiconductor substrate; and

the attachment organic films are formed by filling the recessed portions with the organic film via the through holes.

[c8] 8. The semiconductor device set forth in claim 6, wherein the attachment organic films are comprised of portions of the organic film formed on the surface of the semiconductor substrate.

[c9] 9. The semiconductor device set forth in claim 6, wherein a functional component is formed in the organic film that generates pressure in a direction that can delaminate the organic film from the inorganic film away.

[c10] 10. The semiconductor device set forth in claim 6, wherein the inorganic film is a metallic film that is applied with a predetermined patterning.

[c11] 11. A semiconductor device; comprising:
a semiconductor substrate;
an inorganic film that is formed on one main surface of the semiconductor substrate; and
an organic film that is formed on a surface of the inorganic film such that the inorganic film is interposed between the semiconductor substrate and the organic film;
wherein a through hole is formed in the inorganic film such that the through hole passes from the main surface

of the inorganic film on the organic film side through to an opposite side of the inorganic film, attachment recessed portions are formed in the semiconductor substrate such that at least one portion of each of the outer peripheries thereof extends outward beyond the through holes; and
the organic film is filled into the through holes and attachment recessed portions.

[c12] 12. A semiconductor device; comprising:
a semiconductor substrate;
a first organic film that is formed on one main surface of the semiconductor substrate;
an inorganic film that is formed on a side of the first organic film that is opposite the side formed on the main surface of the semiconductor substrate; and
a second organic film that is formed on a surface of the inorganic film such that the inorganic film is interposed between the first organic film and the second organic film;
wherein a through hole is formed in the inorganic film such that the through hole passes from the main surface of the inorganic film on the second organic film side through to an opposite side of the inorganic film, and the second organic film and the first organic film are linked together and unitarily formed via the through

holes.